DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al. US 5,850,254 in view of Uomori et al., "Electronic Image stabilization system for video cameras and VCRs", February 1992 further in view Ishii et al. US 2004/0105579.

4. As to claim 1, Takano teaches an operation support device, [fig. 1 (2); fig. 7 (2); fig. 11 (2)] comprising: retaining means in the form of a rod and projected from an automotive vehicle; [fig. 1 (2); fig. 7 (2); fig. 11 (2); figures illustrate rod form retaining the image device projecting from the vehicle] image taking means mounted on and retained by said retaining means to take images of objects around said automotive vehicle with a road surface; [fig. 1 (2); fig. 7 (2); fig. 11 (2); figures illustrate rod form retaining the image device projecting from the vehicle; fig. 4; fig. 6; col. 3 lines 24-64;

col. 4 lines 64 - col. 5 lines 7 - illustration that the image taking device takes images of objects around the automobile with a road surface; abstract]

Takano teaches a correction to account for shifting in the camera. [abstract; col. 6 lines 25-45]

Takano does not explicitly teach swing compensation image processing means for processing said images taken by said image taking means with a swing compensation for a swing on a special distance plane distant from said image taking means to said road surface or a surface between said image taking means and said road surface.

Uomori teaches swing compensation image processing means [fig. 1; 66-68] for processing said images taken by said image taking means with a swing compensation for a swing on a special distance plane distant from said image taking means. [fig. 1; pp 66-75]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Uomori with the device of Takano allowing for improved image quality.

Takano modified by Uomori does not explicitly teach swing on a special distance plane distant from said image taking means to said road surface or a surface between said image taking means and said road surface.

Ishii teaches swing on a special distance plane distant from said image taking means to said road surface or a surface between said image taking means and said road surface. [fig. 21; ¶ 0156-0161]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Ishii with the device of Takano (modified by Uomori) allowing for improved accuracy and image quality.

5. As to claim 2, Takano (modified by Uomori and Ishii) using the motivation as present in claim 1 teaches swing compensation image processing means is adapted to detect a rotational swing and a positional swing of said image taking means [Uomori – fig. 1; pp 66-75] mounted on said retaining means [Takano - fig. 1 (2); fig. 7 (2); fig. 11 (2); figures illustrate rod form retaining the image device projecting from the vehicle allowing camera to rotate on a vertical and horizontal axis] by chasing particular points on said automotive vehicle, [Takano - abstract; col. 6 lines 25-45] and to compensate said image by canceling the effect of said rotational swing and said positional swing of said image taking means on said special distance plane. [Uomori – pp 73-76]

6. As to claim 3, Takano (modified by Uomori and Ishii) using the motivation as present in claim 1 teaches detecting means for detecting a rotational swing and a positional swing of said image taking means, [Uomori – pp 73-74] and in which said swing compensation image processing means is adapted to compensate said image by canceling the effect of said rotational swing and said positional swing of said image taking means on said special distance plane. [Uomori – pp 73-76]

7. As to claim 5, Takano (modified by Uomori and Ishii) using the motivation as present in claim 1 teaches distance means for detecting a distance between said object and said image taking means, [Uomori – fig. 1; pp 66-75] and in which said swing compensation image processing means is adapted to change said special distance

plane on the basis of said distance between said object and said image taking means. [Uomori – fig. 1; pp 66-75]

8. As to claim 6, Takano (modified by Uomori and Ishii) using the motivation as present in claim 1 teaches in which said swing compensation image processing means is adapted to produce images compensated on respective distance planes by canceling the effect of said rotational swing [Uomori – pp 73-76]and said positional swing of said image taking means on said distance planes, and to select, as an image to be synthesized, one of said images compensated on said respective distance planes by judging whether or not each of said images compensated on said respective distance planes corresponds to an predictive image which is produced from one or more prior images on the basis of a movement of said automotive vehicle. [Uomori – fig. 1; pp 66-75]

9. As to claim 7, Takano (modified by Uomori and Ishii) using the motivation as present in claim 1 teaches oscillation means for swinging said retaining means, [Takano - fig. 1 (2); fig. 7 (2, 17); fig. 11 (2); figures illustrate rod form retaining the image device projecting from the vehicle allowing camera to rotate on a vertical and horizontal axis; col. 5 lines 37-42] and in which said swing compensation image processing means is adapted to detect said special distance plane with the swing of said image taking means [Uomori – fig. 1; pp 66-75] under the condition that said retaining means is being swung by said oscillation means. [Takano - fig. 1 (2); fig. 7 (2, 17); fig. 11 (2); figures illustrate rod form retaining the image device projecting from the vehicle allowing camera to rotate on a vertical and horizontal axis; col. 5 lines 37-42]

10. As to claim 8, Takano (modified by Uomori and Ishii) using the motivation as present in claim 1 teaches displaying means for displaying said image taken by said image taking means. [Ishii - ¶ 0154]

11. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al. US 5,850,254 in view of Uomori et al., "Electronic Image stabilization system for video cameras and VCRs", February 1992 in view of Ishii et al. US 2004/0105579 further in view of Robotham et al. US 6,160,907.

12. As to claim 4, Takano (modified by Uomori and Ishii) using the motivation as present in claim 1 teaches swing compensation image processing means

Takano (modified by Uomori and Ishii) does not explicitly teach a projective transformation of said taken image to an image projected on a special distance plane before performing an inverse projective transformation to an image to be outputted as an image taken with no swing by an imaginary image taking means.

Robotham teaches a projective transformation of said taken image to an image projected on a special distance plane before performing an inverse projective transformation to an image to be outputted as an image taken with no swing by an imaginary image taking means. [col. 7 lines 59-64; col. 16 lines 50-59; col. 23 lines 55-65]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Robotham with the device of Takano (modified by Uomori and Ishii) allowing for viewing of images of improved quality.

13. As to claim 5, Takano (modified by Uomori, Ishii and Robotham) using the motivation as present in claim 4 teaches distance means for detecting a distance between said object and said image taking means, [Uomori – fig. 1; pp 66-75] and in which said swing compensation image processing means is adapted to change said special distance plane on the basis of said distance between said object and said image taking means. [Uomori – fig. 1; pp 66-75]

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNER HOLDER whose telephone number is (571)270-1549. The examiner can normally be reached on M-W, M-W 8 am-3 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Ustaris can be reached on 571-272-7383. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anner Holder/
Examiner, Art Unit 2483

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